Final

Conventional Explosives Safety Submission

Ordnance and Explosives (OE) Removal Action

for the
Choccolocco Area
U.S. Fish and Wildlife Land Transfer
of

Fort McClellan, Alabama

Task Order 0020

Contract Number DACA87-99-D-0010

U.S. Army Corps of Engineers

Engineering and Support Center

Huntsville, Alabama

Geographical Corps District:

US Army Corps of Engineers, Mobile District

Prepared by:

Foster Wheeler Environmental Corporation

Fort McClellan, Alabama

August 2003

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LIST OF ACRONYMS

AEDA	Ammunition, Explosives, and Dangerous Articles
ANG	Army National Guard
ASP	Ammunition Supply Point
ASR	Archives Search Report
AT	Anti-tank
BCT	Base Cleanup Team
BIP	Blow In Place
BRAC	Base Realignment And Closure
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CERFA	Community Environmental Response Facilitation Act
CWM	Chemical Warfare Materiel
DDESB	Department of Defense Explosives Safety Board
DID	Data Item Description
DMM	Discarded Military Munitions
DOD / DoD	Department Of Defense
DOI	Department of the Interior
EBS	Environmental Baseline Survey
EE/CA	Engineering Evaluation/Cost Analysis
ESS	Explosives Safety Submission
EZ	Exclusion Zone
ft	Foot / Feet
FWENC	Foster Wheeler Environmental Corporation
FWS	U.S. Fish and Wildlife Service
IAW	In Accordance With
illum	Illumination
IT	International Technology Corporation
JPA	Joint Powers Authority
LAW	Light Anti-tank Weapon
LUC	Land Use Control
LUCAP	Land Use Control Assurance Plan
LUCIP	Land Use Control Implementation Plan
MFOB	Mini Front Open Barricade
mm	Millimeter
MPH	Miles Per Hour
MPM	Most Probable Munition
MSD	Minimum Separation Distance
NEW	Net Explosive Weight
NFA	No Further Action
OE	Ordnance Explosives
OFB	Open Front Barricade
Q	Parcels identified in the EBS as having no evidence on CERCLA-related hazardous substance or petroleum product release or disposal, but which do contain other environmental or safety concerns.
QA	Quality Assurance
QC	Quality Control

LIST OF ACRONYMS
(continued)

QD	Quantity Distance
Q-X	Parcels that contain UXO-related issues
RI	Remedial Investigation
RLS	Registered Land Surveyor
RTS	Robotic Total Station
SI	Site Investigation
SSWP	Site Specific Work Plan
SUXOS	Senior UXO Supervisor
TNT	Trinitrotoluene
U.S.	United States
USACE	U.S. Army Corps of Engineers
USAESCH	U.S. Army Engineering Support Center, Huntsville
UXO	Unexploded Ordnance
UXOQCS	UXO Quality Control Specialist
UXOSO	UXO Safety Officer
VTA	Vehicle Towed Array

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1.0 INTRODUCTION

1.1 This Explosives Safety Submission (ESS) has been prepared for the OE Removal on the U.S. Fish and Wildlife Service (FWS) Roads, Fire Breaks, and High Use Areas located at Fort McClellan, Alabama. The purpose of this document is to present the Department of the Army selected remediation methodology to the Department of Defense Explosives Safety Board (DDESB) for review and approval. The regulatory guidance under which this ESS is prepared is the DDESB Memorandum, Subject: Guidance for Clearance Plans dated 27 Jan 98. The purpose of the removal action is to perform a clearance to depth within the area defined as the FWS Roads, Fire Breaks, and High Use Areas. This ESS covers the FWS Roads, Fire Breaks, and High Use Areas only. See Figure 12-1, FWS Area Roads Overview, for a general layout of Fort McClellan and Figure 12-2 FWS Area Removal for specific details of the area covered in this document. This OE removal is being accomplished in advance of the final Engineering Evaluation/Cost Anaylsis (EE/CA) and Action Memorandum in order to support the Congressionally mandated early transfer of property for the creation of the Mountain Longleaf Wildlife Refuge to the Department of the Interior (DOI). Completion of the OE removal over limited areas allows the FWS to conduct wildlife and wildfire management prior to final OE removal actions being completed over the remainder of the refuge.

1.2 This project is Task Order 0020, under contract DACA87-99-D-0010, Ordnance and Explosives Response at Fort McClellan, Alabama. Under the task order, a Site Specific Work Plan (SSWP) is being prepared for this work.

2.0 REASON FOR ORDNANCE EXPLOSIVES (OE)

2.1 Fort McClellan has been used for artillery training of troops and the National Guard as early as 1912 to early WW II. In 1951, Fort McClellan became the site of the Chemical Corps Training Command. In 1962, the U.S. Army Combat Developments Command Chemical Biological-Radiological Agency moved to Fort McClellan. In 1973, the Chemical Corps School along with the U.S. Army Combat Developments Command Chemical Biological-Radiological Agency was moved to Edgewood Arsenal. In 1979, the U.S. Army Chemical Corps School re-established along with a training Brigade for Basic Training. In September of 1999 Fort McClellan was closed under the Base Realignment and Closure Act (BRAC).

2.2. The FWS Roads, Fire Breaks, and High Use Areas has located within its boundaries documented training areas and based on previous investigations and studies conducted at Fort McClellan, the OE located was described as high explosive, practice, training, and expended. See Table 3-1 for a detailed listing of the OE/UXO and OE Scrap with its relationship to the FWS areas (information gathered from the draft Charlie Area EE/CA investigation report).

3.0 AMOUNT AND TYPE OF OE

3.1 ENGINEERING EVALUATION/COST ANALYSIS (EE/CA) REPORTS

3.1.1 Three EE/CA reports, currently being prepared by Foster Wheeler Environmental, indicates the presence of OE/UXO within the FWS Roads, Fire Breaks, and High Use Areas. These properties encompass known impact areas. Table 3-1 is a general listing of the types of OE/UXO and OE Scrap previously located in and adjacent to the FWS Roads, Fire Breaks, and High Use

Areas during the EE/CA. A complete listing of items discovered is available in the draft EE/CA Reports for Alpha, Bravo, and Charlie areas.

3.1.2 Clearance to depth was the recommended risk reduction alternative for these specific areas, based on the findings presented in the draft EE/CA reports. At this time the EE/CA reports have not been finalized and Action Memoranda have not been signed. All field work related to the EE/CAs has been completed. These specific areas were selected for a removal action based on the congressional mandate to the Department of Defense (DoD) to transfer this property to the DOI during this fiscal year. DOI's request to the DoD was made with the intention of opening as much property as possible to the public as quickly as possible. By segregating the FWS Area into two areas, those that are recommended for a removal action and those that are recommended for No Further Action (NFA), the decision could be made to allow immediate FWS use of the NFA areas. See Appendix B for Land Use Controls to be employed until final action has been implemented. Additionally this decision process allows maximun flexibility to conduct clearance actions in the roads, firebreaks, and high use areas in the remainder of the FWS Area prior to approval of the EE/CA Reports and Action Memoranda. The roads, firebreaks and trails were identified by the DOI as being high priorties, as they would be used for fire supression and management of the area, while the high use areas were selected as locations for possible construction of DOI required facilities. Figure 12-1 illustrates that the areas covered by this ESS encompass only the roads, firebreaks, trails and high use within the FWS areas which have been recommended for clearance actions based on the the amount and type of OE/UXO discovered during the EE/CA process and projected land reuse. In advance of this clearance action, UXO warning signs have been placed around the entire perimeter of the areas recommended for clearance alternatives. Due to terrain and accessabilty, this perimeter encircles some areas that were recommended for NFA. These areas, as well as the perimeter in which signs were installed are identified on Figure 12-1. A system of gates and barriers was also put in place at the same time the signs were installed to help control access into the areas recommended for a clearance action. These gates and barriers are also identified on all figures.

Table 3-1

Types of OE/UXO and OE Scrap Found in the Charlie Area

Item Description	Depth (inches)	Target Type	FWS Area Located
OE/UXO Items			(these are listed as FWS-XX)
Projectile, 155mm, AP/HE	0	UXO	1H
Rocket, 2.36in, M6A3	1	UXO	1H
Mortar, 60mm, HE, M49A2	9	UXO	1H,2H
Projectile, 75mm, shrapnel	12	UXO	1H,2H
Projectile, 37mm HE, MkII	5	UXO	3H
Mortar, 81mm, HE, M43	6	UXO	1H,2H
Projectile, 155mm, shrapnel	1	UXO	1H
OE Scrap:			
Projectile, 37mm, fragmentation	2	OE Scrap	1H,3H,4H
Fuze, M1907 PTTF, functioned	2	OE Scrap	1,2,3,4,5H
Projectile fragment, 155mm, HE	2	OE Scrap	1H,3H
Fuze fragment, 75mm	4	OE Scrap	1,2,3,4,5H
Projectile shrapnel rounds, 75mm, empty	0	OE Scrap	1,2,3,4,5H

Item Description	Depth (inches)	Target Type	FWS Area Located
Projectile pusher plates (75mm,105mm,155mm)	3	OE Scrap	1,2,3,4,5H
Mortar tail boom and pieces, 81mm	3	OE Scrap	1H,2H
Mortar fragment, 4.2in	4	OE Scrap	1H,2H
Shrouded rocket tail fin, 3.5in	1	OE Scrap	3H
Mortar fragment, 81mm	3	OE Scrap	1H,2H,3H,5H
Mortar fragment, 60mm	3	OE Scrap	1H,2H
Projectile fragment, 57mm	4	OE Scrap	1H

3.2 MOST PROBABLE MUNITION

3.2.1 The most probable munition (MPM) will be established by area. Within this ESS, the roads, firebreaks and trails within the five areas recommended for a clearance alternative will be cleared. There are five separate MPMs within this removal, and four different minimum separation distance (MSD). The MSD will also be used as the daily Exclusion Zone (EZ) for removal activities. The calculation sheets for the established MPMs are included as Appendix A. The five areas and their prospective MPM and MSD are:

Table 3-2: MPM & MSD

Sector	MPM	MSD
FWS-1H	155mm HE M107	2577ft
FWS-2H	81mm HE M43	1395ft
FWS-3H	155mm HE M107	2577ft
FWS-4H	60mm HE M49	1080ft
FWS-5H	105mm HE M1	1939 ft

Each team working within the boundary will maintain the standard US Army Corps of Engineers (USACE) 200 foot distance between teams. The entire FWS Roads, Fire Breaks, and High Use Areas will be semi-permanently barricaded and gated (See Figure 12-2). If it is determined that a road is not blocked by an existing gate or barrier, a barrier will be placed as needed by the intrusive team prior to beginning work for the day. This will preclude excessive time spent setting up the EZ each day. If during the course of the investigation, OE with a greater fragment range is discovered, the Q-D arc will be adjusted and an amendment to the ESS submitted for approval. While awaiting approval, the distances from DoD 6055.9, Table C5.T1 or C5.T2 will be used for the item in question. See Figure 12-3, FWS Q-D Arcs Overview, for further details of the exclusion zones.

4.0 START DATE

4.1 Site preparation activities including surveying and vegetation removal will commence after approval of the Site Specific Work Plan, which is estimated to be during August 2003. The OE Removal portion will not begin prior to approval of this document during September or October 2003.

5.0 FROSTLINE

5.1 Fort McClellan has no established frost line.

6.0 CLEARANCE TECHNIQUES

6.1 DETECTION METHODS

6.1.1 The entire clearance area is on and along established road beds, with the exception of the high use areas. These include asphalt roads, graded dirt roads and rudimentarty or old dirt roads/trails. The requirements of this clearance include 20 feet off centerline for the asphalt roads and 15 feet off centerline for all dirt roads. The roads will all be subdivided into sections to assist in the tracking of field work (see Figure 12-2). The section will be further sub-divided into three segments (left side, right side, and road bed) for tracking purposes. The high use areas will be divided into grids. On asphalt roads, FWENC will geophysically map, but will not dig any anomalies under pavement.

6.1.2 All the segments within the FWS Roads, Fire Breaks, and High Use Areas will be cleared of OE using one of three methods. Two of the methods involve digital geophysical mapping of the area, while the other method uses hand held instruments to mag and dig the areas. The primary method will be using a Vehicle Towed Array (VTA), which consists of five (5) EM-61 geophysical instruments towed behind a four wheel drive vehicle. The second method involves using a single EM-61 instrument carried by a person. Both methods collect geophysical data, which then has to be interpreted and verified by a qualified geophysicist. The third method is using a hand held instrument to mag and dig an area. The VTA will be used on all areas where it is possible to use it. Terrain and vegetation will be the main reason the VTA can not be used in all areas. If an area cannot be geophysically surveyed with the VTA, a decision will be made as to whether the man carried EM-61 can be used. If neither method can be used due to terrain, that area will be cleared using an approved hand held instrument.

6.1.3 Prior to the geophysical mapping, a Registered Land Surveyor (RLS) will survey in markers every 200 feet (not to exceed line of sight) along all roads selected for this clearance and will survey in the boundary of the high use areas. The 200 foot markers will help the geophysicist maintain quality location data during VTA operations as well as assisting the management team in tracking the removal action.

6.2 RECOVERY AND DISPOSAL

6.2.1 Because of the size and terrain of the areas covered by this ESS, all OE are scheduled to be disposed of once per week. All items will be sandbagged and left in place until demolition is carried out. The area is secured by locked gates, is not accessible to the public and is patrolled by security. As a result, there will be no requirement for guards or other protective measures. Demolition operations will begin when all personnel are out of the Minimum Separation Distance (MSD) of the ordnance being detonated. An MSD sheet has been prepared by USACE for all OE/UXO discovered on Ft. McClellan to date. If an item is discovered that has not been calculated, the contractor will work with the onsite safety representative to acquire the MSD for the item. To the greatest extent possible, all items will be blown in place (BIP) to reduce the risk inherent in handling and moving UXO. The Demolition Team Leader (UXO Technician III) will be responsible for all demolition operations as directed by the Senior UXO Supervisor (SUXOS). Along with the demolition team members, only the UXO Safety Officer (UXOSO) is required to be on-site during disposal operations, the SUXOS will be in the local area, but is not required to be present at the exact location of the demolition operation.

6.2.2 The operation will be performed under the direction and supervision of the Demolition Team Leader, who is charged with the responsibility to ensure that procedures contained in the work plan and referenced documents are followed. The UXOSO will monitor compliance with the safety measures contained in the work plan and associated documents, and in the event of noncompliance, is vested with the authority to stop or suspend operations.

6.2.3 Since the entire Alpha, Bravo and Charlie areas are securely gated, there should be only occasional instances where the disposal or venting operations will have an exclusion zone (EZ) that extends outside the secured area. This will occur along the northern boundary of the Charlie area. If for any reason the EZ should extend into an area that is not secured or is inhabited, DDESB approved engineering controls (e.g. sandbags) will be used, or the area will be evacuated prior to demolition operations being performed. For all intrusive operations, FWENC will use the Range to No More Than 1 Hazardous Fragment per 600 square feet (1/600) distance to reduce the EZ to this lessened, but approved distance. If for any reason this method cannot be used, a Miniture Open Front Barricade (MOFB) or Open Front Barricade (OFB), as appropriate, will be used for all excavations made as part of intrusive operations. For buildings on Fort McClellan which are still within the 1/600 distance, we will schedule our intrusive operations to occur on days when the facility is not occupied. This scheduling will occur with assistance from both USAESCH and the Ft. McClellan Transition Force. There are no inhabited buildings off Fort McClellan which fall within the reduced 1/600 distance.

6.2.4 Upon completion of disposal operations, the Team Leader and one UXO Technician II will inspect each disposal shot. Upon completion of this inspection and providing that there are no residual hazards, the SUXOS will authorize the resumption of site operations.

6.3 QUALITY ASSURANCE/QUALITY CONTROL (QA/QC) PLAN

6.3.1 Quality Control is conducted using a three-phase control process; preparatory, initial, and follow-up inspection/audits to ensure processes are in control and opportunities for improving processes are captured and implemented. The UXO Quality Control Specialist (UXOQCS) has stop-work authority and is organizationally independent from the processes.

6.3.2 A QC inspection will be conducted by a FWENC approved UXOQCS. The method of conducting the inspection will be to sample 10 percent of the areas completed. This sampling will be performed using the same type of equipment as the field teams. The specific QC procedures will be explained in the SSWP.

6.3.3 The failure criteria for Contractor QC and Government QA processing of land parcels that have completed sub-surface clearance are: “ferrous objects with a “width” (diameter) between a 37mm projectile and a 155mm projectile at a depth of less than 11 diameters of the object.” All grids that fail the grid QA criteria will be evaluated and addressed IAW the contracting officer’s determination. All QA failures will be documented with the corrective action taken reported in the Site-Specific Removal Report.

6.4 OE SCRAP EXPLOSIVE HAZARDS

6.4.1 OE Intrusive Teams will locate, excavate, identify and mark ordnance related materials where they are located. Clearly identifiable Non OE scrap will be segregated from OE scrap and

each type will be consolidated for transport to the scrap metal processing area. The leader of the OE Intrusive Team will inspect the items and declare each item as free of energetic material to the best of his/her ability. These items will be transported to the Fort McClellan Scrap Processing Area. Foster Wheeler Environmental is the operator of this Scrap Metal Processing Area. If an ordnance item cannot be determined to be free of explosive, it will be explosively vented. If the item is not positively identified and may be a chemical munition, no venting will be conducted and instructions in Section 9.0 Technical Support will be followed for suspect recovered Chemical Warfare Material (CWM).

6.4.2 In the Scrap Processing Area, the designated UXO Technician will remove the items from the containers transported from the segments/grids. He/She will re-inspect each item to assure that they are free of energetic material to the best of his/her ability. This scrap will be demilitarized and processed for turnover to a scrap processing facility under a separate Task Order.

7.0 ALTERNATE TECHNIQUES

7.1 There are no alternate techniques planned for destruction of OE onsite.

8.0 OFFSITE DESTRUCTION

8.1 Offsite disposal will not be used to destroy OE recovered on site.

9.0 TECHNICAL SUPPORT

9.1 Foster Wheeler Environmental and its sub-contractors will provide the technical support required during the removal action. If recovered OE is identified or suspected of containing Chemical Warfare Materiel (CWM), all intrusive activities will cease, the site will be evacuated in an upwind direction and secured. The US Army Engineering and Support Center Huntsville (USAESCH) Safety Representative and Fort McClellan Transition Force Operations will be notified and disposition instructions requested.

10.0 LAND USE RESTRICTIONS

10.1 INTENDED LAND USE

10.1.1 As discussed in section 1.0, this area will be turned over to the DOI for use as a wildlife refuge. At this time, the portion of the area which has been recommended for a clearance action has been gated and barricaded from the remainder of the Charlie Area.

11.0 PUBLIC INVOLVMENT

11.1 In the event OE is encountered that requires demolition to be performed, then the MSD for intentional detonations will be used unless reduced by approved engineering controls As necessary, guards may be stationed at the perimeter to ensure the exclusion zones are maintained.

12.0 MAPS

12.1 REGIONAL MAP

12.1.1 Figure 12-1, FWS Area Roads Overview, shows the regional location of the FWS Roads, Fire Breaks, and High Use Areas within the Fort McClellan, Anniston, Alabama area.

12.2 SITE MAP

12.2.1 Figure 12-2, FWS Area Removal, shows the detailed location of the FWS Roads, Fire Breaks, and High Use Areas to be cleared.

12.3 Q-D MAP

12.3.1 Figure 12-3 is the FWS Area Q-D Arcs Overview. Each OE Area covered under this submission, as well as the magazines for storage of demolition material, and the scrap holding area are annotated on this map. The FWS Roads, Fire Breaks, and High Use Areas exclusion zone is marked and the inhabited buildings within the exclusion zone are shown on Figure 12-3.

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13.0 QUANTITY-DISTANCE

13.1 OE AREAS

13.1.1 Through the use of barricades and locked gates, the FWS Roads, Fire Breaks, and High Use Areas will be considered one exclusion zone (EZ). See Figure 12-3, FWS Area Q-D Arcs Overview, which shows the location of existing barricades and gates. The barricade and gate locations are used in conjunction with those barricades found in the adjoining Alpha and Bravo areas to secure the area. The keys for these gates will be under the control of FWENC during working hours.

13.2 MAGAZINES

13.2.1 All demolition materiel will be stored in FWENC's approved magazine located on Fort McClellan. The two magazines have been approved for use by Memorandum, Department of Defense Explosives Safety Board (DDESB), DDESB-KO, 31 October 2001, Subject: Site Plan and Final Safety Submission for Storage Facility for Ordnance and Explosives Disposal Support, Fort McClellan, AL. Magazine 1 has a 280-lb NEW HD 1.1 limit; magazine 2 has a 20-lb limit. An Inhabited Building Distance (IBD) arc of 1085 feet applies.

13.2.2 Explosives will be transported in closed vehicles whenever possible. The load shall be well braced and, except when in closed vehicles, covered with a fire-resistant tarpaulin or in an appropriate shipping container.

13.2.3 Transportation of OE and donor explosives will comply with all federal, state, and local regulations. For transportation of OE and explosives to disposal site, FWENC and its sub-contractor will comply with regulatory requirements and the following:

1. Initiating explosives, such as blasting caps, will remain separated at all times. Blasting caps may be transported in the same vehicle as long as they are in a separate container (C770 Day Box) and secured away from other items;

2. Compatibility requirements including Category Z storage authorization requirements will be observed;

3. Only UXO Technician III and above may be issued and transport explosive materials. The receiving party shall sign the receipt documents for accountability;

4. Operators transporting explosives will have a valid drivers license;

5. Drivers will comply with posted speed limits but will not exceed a safe and reasonable speed for the prevailing conditions. Vehicles transporting explosives off-road will not exceed 25 MPH;

6. Personnel will not ride in the cargo compartment with explosives or OE;

7. Vehicles transporting donor explosives or OE will be inspected daily, and will be properly placarded;

8. Vehicle engine will not be running when loading/unloading explosives;

9. Beds of vehicles will have either a wooden bed liner, dunnage, or sand bags to protect the explosives from contact with the metal bed and fittings; and

10. Vehicles transporting explosives will have a first aid kit, two 10 lb., Class B/C rated fire extinguishers, and communications capability.

13.2.4 OE will be disposed of or vented in place where it is encountered unless movement is authorized by the onsite USAESCH safety representative.

APPENDIX A

CALCULATION SHEETS FOR MPM

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U. S. ARMY ENGINEERING & SUPPORT CENTER, HUNTSVILLE — CORPS OF ENGINEERS

DESIGN REVIEW COMMENTS

PROJECT: CN 05-167-03, Ft McClellan, Charlie Area Removal Action MPM's

☐ SITE DEV & GEO ☐ ENVIR PROT& UTIL ☐ ARCHITECTURAL ☐ STRUCTURAL
☐ MECHANICAL ☐ MFG TECHNOLOGY ☐ ELECTRICAL ☐ INST & CONTROLS
☐ SAFETY ☐ ADV TECH ☐ ESTIMATING ☐ SPECIFICATIONS
☐ SYSTEMS ENG ☐ VALUE ENG ☐ OTHER

REVIEW: MPM's
DATE: 22 May 2003
NAME: Michelle Crull, PhD, PE (256) 895-1653

ITEM	DRAWING NO. OR REFERENCE	COMMENT	ACTION
1		I have reviewed the Charlie Area EE/CA (Feb 2003) and have determined the MPM's for the following sectors: FWS-1H-WM: 155mm HE M107 FWS-2H-WM: 81mm HE M43 FWS-3H-WM: 155mm HE M107 FWS-4h-WM: 60mm HE M49 FWS-5H-WM: 105mm HE M1 Calculation sheets for these items are attached. The remainder of the sectors in the Charlie Area were recommended for No Further Action so MPM's were not selected.	

ACTION CODES
A - ACCEPTED/CONCUR
D - ACTION DEFERRED
W - WITHDRAWN
N - NON-CONCUR
VE - VE POTENTIAL/VEP ATTACHED

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Minimum Separation Distances
Ft. McClellan
105mm M1
22 May 2003

REQUESTED BY: Dan Copeland
PREPARED BY: Michelle Crull, PhD, PE

This form shows calculated distances only. It does not constitute approval. Concurrence of CEHNC-OE-S is required to determine the applicable distance for a specific site.

In accordance with (IAW) EM 1110-1-4009, the minimum separation distance for unintentional detonations shall be the largest of the maximum fragment range, the K50 ($50W^{1/3}$ where W is the total net explosive weight for the detonation) overpressure distance or 200 ft. In accordance with (IAW) EM 1110-1-4009, use of the range to no more than 1 hazardous fragment/600 sq ft as the minimum separation distance for unintentional detonations requires written justification, a risk analysis, calculation of this distance by CEHNC-ED-CS-S, and concurrence of CEHNC-OE-S.

IAW EM 1110-1-4009, the minimum separation distance for intentional detonations shall be the largest of the maximum fragment range, the K328 ($328W^{1/3}$ where W is the total net explosive weight for the detonation) overpressure distance or 200 ft.

CALCULATED FRAGMENT DISTANCES

Maximum Fragment Range = 1939 ft
Range to No More Than 1 Hazardous Fragment/600 sq ft = 341 ft

CALCULATED OVERPRESSURE DISTANCES BASED ON OE ITEM'S EXPLOSIVE WEIGHT ONLY (i.e. NO DONOR CHARGE)

Range to 0.9 psi Overpressure (K50) = 97 ft
K328 Overpressure Range = 636 ft (based on munition NEW only, no donor)

The primary fragmentation characteristics used in the calculation of the values listed above were computed IAW CEHNC-ED-CS-S-98-1. The maximum fragment range was calculated using the maximum weight fragment and the initial velocity from these characteristics in the computer software TRAJ. The range to no more than 1 hazardous fragment/600 sq ft was calculated IAW CEHNC-ED-CS-S-98-2.

NOTE THAT ALL MITIGATION METHODS FOR INTENTIONAL DETONATIONS ARE BASED ON THE USE OF COMMERCIAL SHAPED CHARGES FOR INITIATION. IF ANY OTHER DONOR CHARGE IS TO BE USED THIS INFORMATION MUST BE PROVIDED TO CEHNC WITH A REQUEST FOR NEW CALCULATIONS!

Minimum Separation Distances
Ft. McClellan
105mm M1
22 May 2003

SANDBAG ENCLOSURE FOR INTENTIONAL DETONATIONS

Required Sandbag Thickness = 24 in. with 6" standoff between munition and sandbags
Sandbag Throw Distance = 135 ft
Minimum Separation Distance = 200 ft

The required sandbag thickness and the sandbag throw distance were calculated IAW CEHNC-ED-CS-S-98-7. A copy of HNC-ED-CS-S-98-7, "Use of Sandbags for Mitigation of Fragmentation and Blast Effects Due to Intentional Detonation of Munitions" must be available on site.

WATER MITIGATION FOR INTENTIONAL DETONATIONS

Water Containment System (see HNC-ED-CS-S-00-3)	Minimum Separation Distance (ft)
1100 gallon tank	200

The water containment system and the minimum separation distance were determined IAW HNC-ED-CS-S-00-3. A copy of HNC-ED-CS-S-00-3, "Use of Water for Mitigation of Fragmentation and Blast Effects Due to Intentional Detonation of Munitions" must be available on site.

MINIMUM SEPARATION DISTANCES WHILE USING OFB DURING INTRUSIVE ACTIVITIES

Design of the Open Front Barricade (OFB) is in accordance with HNC-ED-CS-S-99-1, "Open Front and Enclosed Barricades". A copy of this report must be available on site. DDESB has placed certain restrictions on the approved usage of the OFB. These are listed in the approval letter in the front of the report.

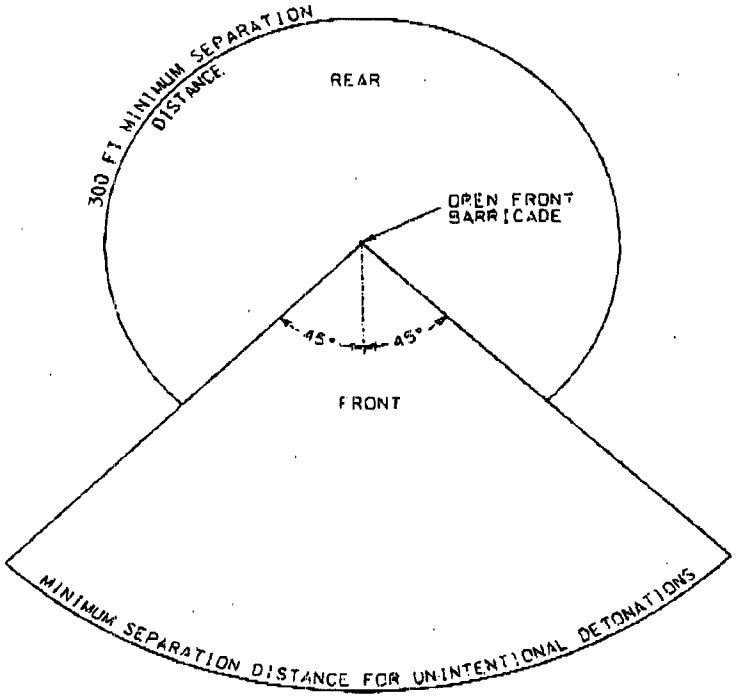
Thickness of Aluminum Required to Prevent Perforation = 1.87 in
Thickness of Steel Required to Prevent Perforation = 0.90 in

The OFB is designed to defeat fragments to the rear and sides of the OFB in the case of an accidental/unintentional detonation during intrusive activities. The fragment distances to the front of the OFB are the same as the fragment distances without the OFB (see figure). The OFB is not designed to reduce the effects of blast overpressure. The OFB may not be used for intentional detonations. The minimum separation distances to the rear and sides of the

Minimum Separation Distances
Ft. McClellan
105mm M1
22 May 2003

OFB must be maintained based on the expected throw distance of the OFB itself.

Minimum Separation Distance to sides and rear = 300 ft
Minimum Separation Distance to front = 1939 ft
K50 distance = 97 ft



MINIMUM SEPARATION DISTANCE FOR UNINTENTIONAL DETONATIONS
USING OPEN FRONT BARRICADE DURING INTRUSIVE ACTIVITIES

SIGNATURES:

Michelle Cudd 5/22/03
Subject Matter Expert Date

Sherene Qerchner 5/22/03
QA Reviewer Date

FORM DATE 30 SEPTEMBER 2002

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Minimum Separation Distances
Ft. McClellan
81mm M43
22 May 2003

REQUESTED BY: Dan Copeland
PREPARED BY: Michelle Crull, PhD, PE

This form shows calculated distances only. It does not constitute approval. Concurrence of CEHNC-OE-S is required to determine the applicable distance for a specific site.

In accordance with (IAW) EM 1110-1-4009, the minimum separation distance for unintentional detonations shall be the largest of the maximum fragment range, the K50 ($50W^{1/3}$ where W is the total net explosive weight for the detonation) overpressure distance or 200 ft. In accordance with (IAW) EM 1110-1-4009, use of the range to no more than 1 hazardous fragment/600 sq ft as the minimum separation distance for unintentional detonations requires written justification, a risk analysis, calculation of this distance by CEHNC-ED-CS-S, and concurrence of CEHNC-OE-S.

IAW EM 1110-1-4009, the minimum separation distance for intentional detonations shall be the largest of the maximum fragment range, the K328 ($328W^{1/3}$ where W is the total net explosive weight for the detonation) overpressure distance or 200 ft.

CALCULATED FRAGMENT DISTANCES

Maximum Fragment Range = 1395 ft
Range to No More Than 1 Hazardous Fragment/600 sq ft = 230 ft

CALCULATED OVERPRESSURE DISTANCES BASED ON OE ITEM'S EXPLOSIVE WEIGHT ONLY (i.e. NO DONOR CHARGE)

Range to 0.9 psi Overpressure (K50) = 61 ft
K328 Overpressure Range = 403 ft (based on munition NEW only, no donor)

The primary fragmentation characteristics used in the calculation of the values listed above were computed IAW CEHNC-ED-CS-S-98-1. The maximum fragment range was calculated using the maximum weight fragment and the initial velocity from these characteristics in the computer software TRAJ. The range to no more than 1 hazardous fragment/600 sq ft was calculated IAW CEHNC-ED-CS-S-98-2.

NOTE THAT ALL MITIGATION METHODS FOR INTENTIONAL DETONATIONS ARE BASED ON THE USE OF COMMERCIAL SHAPED CHARGES FOR INITIATION. IF ANY OTHER DONOR CHARGE IS TO BE USED THIS INFORMATION MUST BE PROVIDED TO CEHNC WITH A REQUEST FOR NEW CALCULATIONS!

Minimum Separation Distances
Ft. McClellan
81mm M43
22 May 2003

SANDBAG ENCLOSURE FOR INTENTIONAL DETONATIONS

Required Sandbag Thickness = 24 in. with 6" standoff between munition and sandbags
Sandbag Throw Distance = 125 ft
Minimum Separation Distance = 200 ft

The required sandbag thickness and the sandbag throw distance were calculated IAW CEHNC-ED-CS-S-98-7. A copy of HNC-ED-CS-S-98-7, "Use of Sandbags for Mitigation of Fragmentation and Blast Effects Due to Intentional Detonation of Munitions" must be available on site.

WATER MITIGATION FOR INTENTIONAL DETONATIONS

Water Containment System (see HNC-ED-CS-S-00-3)	Minimum Separation Distance (ft)
1100 gallon tank	200

The water containment system and the minimum separation distance were determined IAW HNC-ED-CS-S-00-3. A copy of HNC-ED-CS-S-00-3, "Use of Water for Mitigation of Fragmentation and Blast Effects Due to Intentional Detonation of Munitions" must be available on site

MINIMUM SEPARATION DISTANCES WHILE USING MOFB DURING INTRUSIVE ACTIVITIES

Design of the Miniature Open Front Barricade (MOFB) is in accordance with HNC-ED-CS-S-98-8, "Miniature Open Front Barricade". A copy of this report must be available on site. DDESB has placed certain restrictions on the approved usage of the MOFB. These are listed in the approval letter in the front of the report.

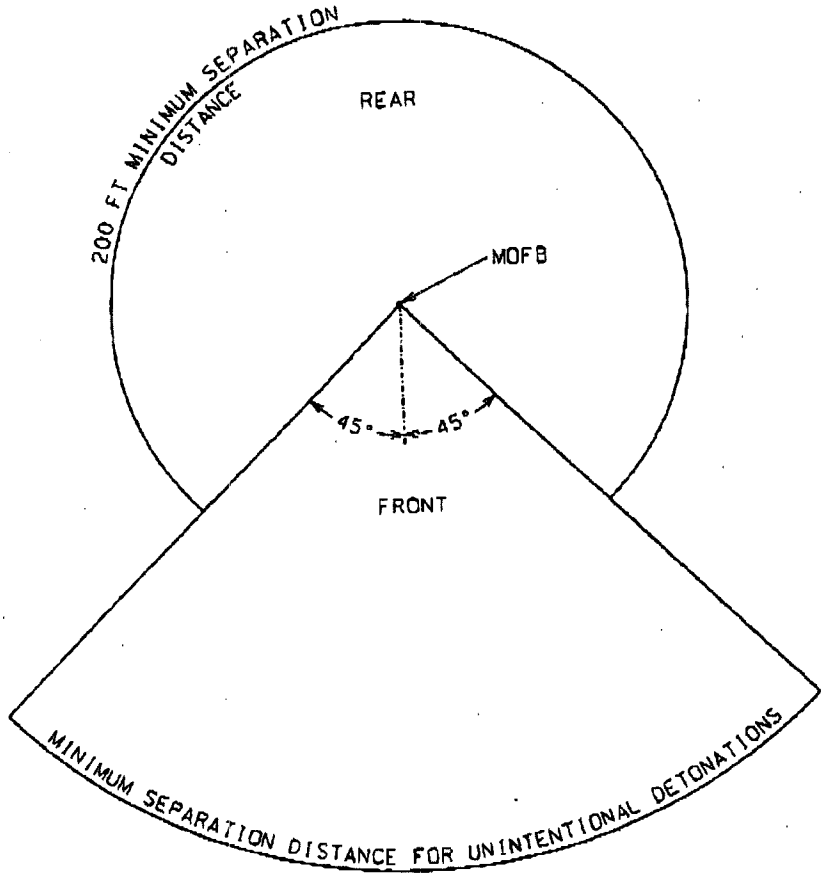
Thickness of Aluminum Required to Prevent Perforation = 1.43 in

The MOFB is designed to defeat fragments to the rear and sides of the MOFB in the case of an accidental/unintentional detonation during intrusive activities. The fragment distances to the front of the MOFB are the same as the fragment distances without the MOFB (see figure). The MOFB is not designed to reduce the effects of blast overpressure. The MOFB may not be used for intentional detonations. The minimum separation distances to the rear and sides of the

Minimum Separation Distances
Ft. McClellan
81mm M43
22 May 2003

MOFB must be maintained based on the expected throw distance of the MOFB itself.

Minimum Separation Distance to sides and rear = 200 ft
Minimum Separation Distance to front = 1395 ft
K50 distance = 61 ft



MINIMUM SEPARATION DISTANCE FOR UNINTENTIONAL DETONATIONS
USING MINIATURE OPEN FRONT BARRICADE DURING INTRUSIVE ACTIVITIES

SIGNATURES:

Michelle Cruell 5/22/03
Subject Matter Expert Date

Sherene Opichka 5/22/03
QA Reviewer Date

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Minimum Separation Distances
Ft. McClellan
155mm M107
22 May 2003

REQUESTED BY: Dan Copeland
PREPARED BY: Michelle Crull, PhD, PE

This form shows calculated distances only. It does not constitute approval. Concurrence of CEHNC-OE-S is required to determine the applicable distance for a specific site.

In accordance with (IAW) EM 1110-1-4009, the minimum separation distance for unintentional detonations shall be the largest of the maximum fragment range, the K50 ($50W^{1/3}$ where W is the total net explosive weight for the detonation) overpressure distance or 200 ft. In accordance with (IAW) EM 1110-1-4009, use of the range to no more than 1 hazardous fragment/600 sq ft as the minimum separation distance for unintentional detonations requires written justification, a risk analysis, calculation of this distance by CEHNC-ED-CS-S, and concurrence of CEHNC-OE-S.

IAW EM 1110-1-4009, the minimum separation distance for intentional detonations shall be the largest of the maximum fragment range, the K328 ($328W^{1/3}$ where W is the total net explosive weight for the detonation) overpressure distance or 200 ft.

CALCULATED FRAGMENT DISTANCES

Maximum Fragment Range = 2577 ft
Range to No More Than 1 Hazardous Fragment/600 sq ft = 447 ft

CALCULATED OVERPRESSURE DISTANCES BASED ON OE ITEM'S EXPLOSIVE WEIGHT ONLY (i.e. NO DONOR CHARGE)

Range to 0.9 psi Overpressure (K50) = 141 ft
K328 Overpressure Range = 922 ft (based on munition NEW only, no donor)

The primary fragmentation characteristics used in the calculation of the values listed above were computed IAW CEHNC-ED-CS-S-98-1. The maximum fragment range was calculated using the maximum weight fragment and the initial velocity from these characteristics in the computer software TRAJ. The range to no more than 1 hazardous fragment/600 sq ft was calculated IAW CEHNC-ED-CS-S-98-2.

NOTE THAT ALL MITIGATION METHODS FOR INTENTIONAL DETONATIONS ARE BASED ON THE USE OF COMMERCIAL SHAPED CHARGES FOR INITIATION. IF ANY OTHER DONOR CHARGE IS TO BE USED THIS INFORMATION MUST BE PROVIDED TO CEHNC WITH A REQUEST FOR NEW CALCULATIONS!

Minimum Separation Distances
Ft. McClellan
155mm M107
22 May 2003

SANDBAG ENCLOSURE FOR INTENTIONAL DETONATIONS

Required Sandbag Thickness = 36 in. with 6" standoff between munition and sandbags
Sandbag Throw Distance = 220 ft
Minimum Separation Distance = 220 ft

The required sandbag thickness and the sandbag throw distance were calculated IAW CEHNC-ED-CS-S-98-7. A copy of HNC-ED-CS-S-98-7, "Use of Sandbags for Mitigation of Fragmentation and Blast Effects Due to Intentional Detonation of Munitions" must be available on site.

WATER MITIGATION FOR INTENTIONAL DETONATIONS

Water Containment System (see HNC-ED-CS-S-00-3)	Minimum Separation Distance (ft)
1100 gallon tank	275

The water containment system and the minimum separation distance were determined IAW HNC-ED-CS-S-00-3. A copy of HNC-ED-CS-S-00-3, "Use of Water for Mitigation of Fragmentation and Blast Effects Due to Intentional Detonation of Munitions" must be available on site.

MINIMUM SEPARATION DISTANCES WHILE USING OFB DURING INTRUSIVE ACTIVITIES

Design of the Open Front Barricade (OFB) is in accordance with HNC-ED-CS-S-99-1, "Open Front and Enclosed Barricades". A copy of this report must be available on site. DDESB has placed certain restrictions on the approved usage of the OFB. These are listed in the approval letter in the front of the report.

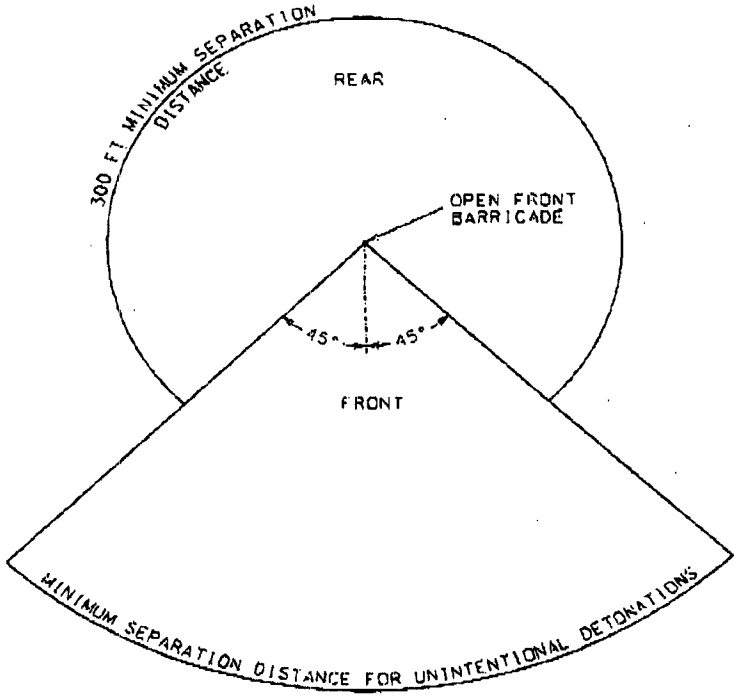
Thickness of Aluminum Required to Prevent Perforation = 2.59 in
Thickness of Steel Required to Prevent Perforation = 1.27 in

The OFB is designed to defeat fragments to the rear and sides of the OFB in the case of an accidental/unintentional detonation during intrusive activities. The fragment distances to the front of the OFB are the same as the fragment distances without the OFB (see figure). The OFB is not designed to reduce the effects of blast overpressure. The OFB may not be used for intentional detonations. The minimum separation distances to the rear and sides of the

Minimum Separation Distances
Ft. McClellan
155mm M107
22 May 2003

OFB must be maintained based on the expected throw distance of the OFB itself.

Minimum Separation Distance to sides and rear = 300 ft
Minimum Separation Distance to front = 2577 ft
K50 distance = 141 ft



MINIMUM SEPARATION DISTANCE FOR UNINTENTIONAL DETONATIONS
USING OPEN FRONT BARRICADE DURING INTRUSIVE ACTIVITIES

SIGNATURES:

Michelle Cuell 5/22/03
Subject Matter Expert Date

Sheene Opichka 5/22/03
QA Reviewer Date

FORM DATE 30 SEPTEMBER 2002

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Minimum Separation Distances
Ft. McClellan
60mm M49
22 May 2003

REQUESTED BY: Dan Copeland
PREPARED BY: Michelle Crull, PhD, PE

This form shows calculated distances only. It does not constitute approval. Concurrence of CEHNC-OE-S is required to determine the applicable distance for a specific site.

In accordance with (IAW) EM 1110-1-4009, the minimum separation distance for unintentional detonations shall be the largest of the maximum fragment range, the K50 ($50W^{1/3}$ where W is the total net explosive weight for the detonation) overpressure distance or 200 ft. In accordance with (IAW) EM 1110-1-4009, use of the range to no more than 1 hazardous fragment/600 sq ft as the minimum separation distance for unintentional detonations requires written justification, a risk analysis, calculation of this distance by CEHNC-ED-CS-S, and concurrence of CEHNC-OE-S.

IAW EM 1110-1-4009, the minimum separation distance for intentional detonations shall be the largest of the maximum fragment range, the K328 ($328W^{1/3}$ where W is the total net explosive weight for the detonation) overpressure distance or 200 ft.

CALCULATED FRAGMENT DISTANCES

Maximum Fragment Range = 1080 ft
Range to No More Than 1 Hazardous Fragment/600 sq ft = 200 ft

CALCULATED OVERPRESSURE DISTANCES BASED ON OE ITEM'S EXPLOSIVE WEIGHT ONLY (i.e. NO DONOR CHARGE)

Range to 0.9 psi Overpressure (K50) = 52 ft
K328 Overpressure Range = 342 ft (based on munition NEW only, no donor)

The primary fragmentation characteristics used in the calculation of the values listed above were computed IAW CEHNC-ED-CS-S-98-1. The maximum fragment range was calculated using the maximum weight fragment and the initial velocity from these characteristics in the computer software TRAJ. The range to no more than 1 hazardous fragment/600 sq ft was calculated IAW CEHNC-ED-CS-S-98-2.

NOTE THAT ALL MITIGATION METHODS FOR INTENTIONAL DETONATIONS ARE BASED ON THE USE OF COMMERCIAL SHAPED CHARGES FOR INITIATION. IF ANY OTHER DONOR CHARGE IS TO BE USED THIS INFORMATION MUST BE PROVIDED TO CEHNC WITH A REQUEST FOR NEW CALCULATIONS!

Minimum Separation Distances
Ft. McClellan
60mm M49
22 May 2003

SANDBAG ENCLOSURE FOR INTENTIONAL DETONATIONS

Required Sandbag Thickness = 20 in. with 6" standoff between munition and sandbags
Sandbag Throw Distance = 125 ft
Minimum Separation Distance = 200 ft

The required sandbag thickness and the sandbag throw distance were calculated IAW CEHNC-ED-CS-S-98-7. A copy of HNC-ED-CS-S-98-7, "Use of Sandbags for Mitigation of Fragmentation and Blast Effects Due to Intentional Detonation of Munitions" must be available on site.

WATER MITIGATION FOR INTENTIONAL DETONATIONS

Water Containment System (see HNC-ED-CS-S-00-3)	Minimum Separation Distance (ft)
Inflatable pool	200
5 gallon carboys	200

The water containment system and the minimum separation distance were determined IAW HNC-ED-CS-S-00-3. A copy of HNC-ED-CS-S-00-3, "Use of Water for Mitigation of Fragmentation and Blast Effects Due to Intentional Detonation of Munitions" must be available on site

MINIMUM SEPARATION DISTANCES WHILE USING MOFB DURING INTRUSIVE ACTIVITIES

Design of the Miniature Open Front Barricade (MOFB) is in accordance with HNC-ED-CS-S-98-8, "Miniature Open Front Barricade". A copy of this report must be available on site. DDESB has placed certain restrictions on the approved usage of the MOFB. These are listed in the approval letter in the front of the report.

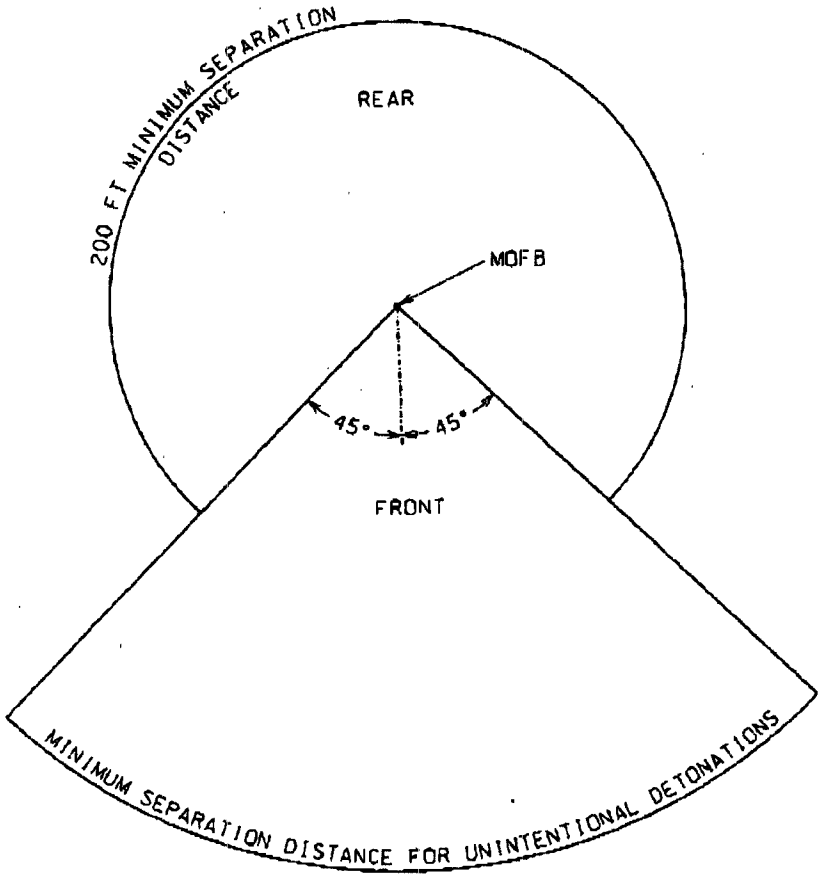
Thickness of Aluminum Required to Prevent Perforation = 1.14 in

The MOFB is designed to defeat fragments to the rear and sides of the MOFB in the case of an accidental/unintentional detonation during intrusive activities. The fragment distances to the front of the MOFB are the same as the fragment distances without the MOFB (see figure). The MOFB is not designed to reduce the effects of blast overpressure. The MOFB may not be used for intentional detonations. The minimum separation distances to the rear and sides of the

Minimum Separation Distances
Ft. McClellan
60mm M49
22 May 2003

MOFB must be maintained based on the expected throw distance of the MOFB itself.

Minimum Separation Distance to sides and rear = 200 ft
Minimum Separation Distance to front = 1080 ft
K50 distance = 52 ft



MINIMUM SEPARATION DISTANCE FOR UNINTENTIONAL DETONATIONS
USING MINIATURE OPEN FRONT BARRICADE DURING INTRUSIVE ACTIVITIES

SIGNATURES:

Michelle Crull 5/22/03
Subject Matter Expert Date

Sherene Opichka 5/22/03
QA Reviewer Date

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Appendix B

Introduction and Enclosure 1
Of the
LUCIP

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U.S. FISH AND WILDLIFE SERVICE
MOUNTAIN LONGLEAF NATIONAL WILDLIFE REFUGE
LAND USE CONTROL IMPLEMENTATION PLAN

Introduction

1. Background

This Interim Land Use Control Implementation Plan (LUCIP) and the interim land use controls (LUC) addressed within the LUCIP apply to property the Department of the Army (Army) will transfer to the U.S. Fish and Wildlife Service (FWS) for purposes of establishing the Mountain Longleaf National Wildlife Refuge (Refuge). This Interim LUCIP complies with requirements set forth in the Land Use Control Assurance Plan (December 2000) (LUCAP) signed by the U.S. Environmental Protection Agency (EPA), Alabama Department of Environmental Management (ADEM), U.S. Department of the Army for Fort McClellan, and the Anniston Calhoun County Fort McClellan Development Joint Powers Authority (JPA).

The transfer package for the Refuge will include a memorandum of agreement (MOA) between the FWS and the Army setting forth the terms and conditions of the transfer--the Transfer MOA. A local operational MOA will establish procedures for daily operations at the Refuge.

The Army will transfer the Refuge to the FWS while the property transferred is being characterized. The Army's characterization effort is focused on investigating for hazardous substances, to include munitions constituents, and for unexploded ordnance (UXO) and discarded military munitions (Figure 1). FWS and the Army will impose "interim" LUC on all sites being characterized prior to reaching a final remedy decision LUC. These LUCs may be revised or modified prior to the conduct of required response actions. Based on characterization and required response actions, the need for "final" LUC for certain areas or sites will be determined. If imposed, these LUC will be addressed in the appropriate decision document. This LUCIP will be revised to reflect any changes to LUC.

These interim LUCs for areas being characterized for UXO and discarded military munitions shall be applicable during characterization and prior to receipt of an approved explosives safety submission for required response actions. (Modification or revision to LUCs that address explosives safety-related concerns will be reviewed by the U.S. Army Technical Center for Explosives Safety and approved by the Department of Defense Explosives Safety Board (DDESB).

This LUCIP consists of eight enclosures that describe the interim LUC for each characterization effort within the Refuge. Enclosure 1 describes interim LUC for the UXO and discarded military munitions. Enclosures 2-8 describe interim LUC for the investigation areas being characterized for hazardous substances to include munitions constituents. The areas described in enclosures 2-8 lie within the areas the Army is characterizing for UXO and discarded military munitions.

2. Source and/or Decision Documents
(See enclosures for the areas that are undergoing characterization and the basis for determination of appropriate LUC.)

3. Site Location and Description
The Refuge is located in the eastern portion of the former Fort McClellan's Main Post. The property transferred by the Army encompasses approximately 7,700 acres and contains a large population of mountain longleaf pine. The military used this area in various types of training from 1912 (and possibly as early as 1898) to 1999. (Site-specific information for these areas is provided in the enclosures.)

4. LUC Boundaries
LUC are defined for individual investigation or characterization areas or parcels located within the Refuge. (Site boundaries for these areas are provided in the enclosures.)

5. LUC Objectives
The Army's goal for the LUC described in this LUCIP is to prevent risk to human health and the environment and to promote human safety by minimizing the potential for exposure to any hazards that may be present. (Site-specific information on the objectives of risk mitigation for these areas is provided in the enclosures.)

6. LUC Required to Achieve the Objectives
Land Use Controls include any type of physical, legal, or administrative mechanism that restricts the use of or limits access to real property to prevent or reduce risks to human health and the environment. The LUC applicable for each characterization or investigation area are described in the enclosures for the individual areas. The LUC described in this LUCIP meet the Army's goal in section 5 above.

7. Right of Entry
The Army reserves the right under the Transfer MOA to enter the property and may inspect the adequacy of LUC enforcement.

8. Frequency of Monitoring and Reporting Requirements

a. This plan will be updated as necessary to incorporate the results of characterization.
b. The Army will compile an annual report on the status of these LUC. FWS will provide input to this report. The Army will provide this report, in March of each year, to the EPA Region 4, Alabama Department of Environmental Management, and the FWS. The report must accurately demonstrate whether LUC remain effective. If a LUC is not or has not been effective, the report must indicate corrective actions.
c. Until a remedy is in place for the Refuge or specific portions of the refuge, 5-year reviews will not be required.

9. Responsibility for Monitoring, Maintaining, and Enforcing Interim LUC

Unless otherwise stated, the Army is responsible for monitoring, maintaining, and enforcing interim LUC. In exercising its administrative jurisdiction over the property, FWS shall report any observed LUC violations to the Army's on-site representative and shall take other appropriate preventive action if danger to human health and environment is indicated. (Note: FWS will be responsible for any final LUC.)

10. Enforcement Options Should a LUC Violation Occur

Should a third party violate the terms and intent of these LUCIPs the Army or FWS will address the violation with the third party. If the third party does not take corrective action within 30 days, FWS or the Army will consider options (e.g., civil action, criminal prosecution) available to correct the violation.

11. Reducing or Removing LUC

These LUC are intended to be protective of the public for existing site conditions.

a. Interim LUC - At the time of property transfer to the FWS, the Army is characterizing the parcels included in this LUCIP. For Refuge sites currently being characterized, the LUC described herein are considered interim LUC. Pending the results of characterization and any required follow-on actions, there may be revisions, modifications, additions to, or deletions of the interim LUC. Any modifications, additions to, or deletions of the interim LUC will be in coordination with FWS.

b. Final LUC - Based on characterization or investigation and remedy decisions, final LUC that may be required for certain sites or areas will be documented in a decision document. This LUCIP will be revised to reflect changes to LUC based on final decisions for sites under investigation. If or when final LUC are required on the property, they shall remain in effect until
    1) Changes in applicable Federal and State risk-based clean-up standards indicate that site contaminants no longer pose potential residential risk; or
    2) There is a reduction in site contaminant concentrations to below Federal and State residential risk-based clean-up standards.

12. Point of Contact

The point of contact is the Site Manager, U.S. Army Garrison/Transition Force, 291 Jimmy Parks Blvd., Fort McClellan, Alabama, 36205-5000; telephone 256-848-3847.

13. Emergency Contacts

Transition Force Security Operations 256-848-5680/4824 (duty hours)
256-282-0140 (after duty hours)

14. Disclaimer

This LUCIP defines interim land use controls on property that will transfer from the Army to the FWS under a Fed-to-Fed transfer. The Army will maintain responsibility for these interim LUC. Final decisions on Refuge sites currently being characterized will be documented in decision documents. Those final decisions may include remedies that

may include LUC. The Army's responsibilities for interim LUC under this LUCIP will be terminated upon institution of final remedy decisions. The FWS will have the responsibility for any final LUC that may be imposed as a result of final remedies.

U.S. FISH AND WILDLIFE SERVICE MOUNTAIN LONGLEAF NATIONAL WILDLIFE REFUGE

Enclosure 1
Interim Land Use Controls for Ordnance and Explosives Investigation Area

1. Background

See LUCIP introduction.

2. Source and/or Decision Documents

a. Environmental Science and Engineering, Inc. 1998, Final Environmental Baseline Survey (EBS), January.
b. U.S. Army Corps of Engineers, St. Louis District, 2001, Archives Search Report, Fort McClellan, Anniston, Alabama, (ASR), September.
c. Oak Ridge National Laboratories, 1999, Historical Aerial Photograph Investigation, August.
d. U.S. Environmental Protection Agency, 1990, Environmental Photographic Interpretation Center.
e. Foster Wheeler Environmental Corp, 2000, Reconnaissance Findings, Conceptual Plan, and Proposed Scope of Work, August.
f. Foster Wheeler Environmental Corporation, 2002, Site Specific Work Plan Charlie Area Engineering Evaluation/Cost Analysis Ordnance and Explosives Response Fort McClellan, Alabama, February.

3. Site Location and Description (See the Enclosure 1 Figure)

The area described in this enclosure includes certain parts of the Refuge where characterization required for a munitions response are ongoing (see the Enclosure 1 Figure). The Refuge is located in the eastern section of the former Fort McClellan. It is comprised of portions of the Choccolocco Mountains and contains several thousand acres of mountain longleaf pine. Fort McClellan has documented use as a military training area since 1912, when the Alabama National Guard used the fort for artillery training. As early as 1898, the military may have used Choccolocco Mountains for artillery training. Military training occurred at this fort until base closure in 1999. The Refuge area was used for training military in small arms, 60mm and 81mm mortars, 40mm rifle grenades, smoke grenades, hand grenades, and slap flares. The area also was used for tank training and maneuvering. In addition to the on-going characterization for a munitions response, the Army is investigating the Refuge area for the presence of hazardous substances to include munitions constituents.

4. LUC Boundaries (See the Enclosure 1 Figure)

The boundary for the area where the interim LUC (see paragraph 6) apply is marked as the "No Public Access" area (enclosure 1 figure). Also shown is the Refuge area that the Army considers accessible for the intended reuse. This area is marked as “Public Access".

5. LUC Objectives

The interim LUC in paragraph 6 are intended to minimize risk to human health and the environment and to promote human safety. The objective is to minimize the potential for exposure to unexploded ordnance (UXO), discarded military munitions (DMM), and any environmental contaminants that may be present and is achieved by:

a. Controlling access to areas known or suspected to contain UXO or DMM.
b. Educating the public on the explosive hazards associated with munitions that may be present, particularly UXO, and the actions they should take (Recognize, Retreat, Report) should they encounter a UXO or suspected UXO.

6. Interim LUC

a. LUC for Specific Areas (See the Enclosure 1 Figure)

1) The area marked as "No Public Access" on the figure is delineated by signs. Trespass into prohibited areas subjects the trespasser to prosecution under Alabama state law and Federal law.
    a) Fish and Wildlife Service (FWS) will inspect the signage on a non routine basis (during the course of performing other Refuge duties) to ensure they are both in place and legible. Should signage need to be replaced, FWS will contact the Army.
    b) The Army will be responsible for purchasing and installing new signs. All boundary signage is within line of sight of the adjoining signs. Signage will be according to guidance by the Army and the Occupational Safety and Health Act.

2) The areas noted as "Potential UXO Areas" within the "No Public Access" area on the figure are known or suspected to contain UXO.
    a) The public is prohibited from entering these areas.
    b) FWS personnel are prohibited from entering these areas, unless specifically authorized. When determined necessary, personnel authorized access to these areas will receive a safety briefing and be escorted by military Explosives Ordnance Disposal (EOD) or UXO technicians.
    c) Army personnel, to include contractors, involved in intrusive or investigative activities are allowed to enter these areas, when authorized, provided they have received a safety briefing or are qualified military EOD personnel or UXO Technicians. When determined necessary, personnel will be escorted by military EOD or UXO technicians and will be provided UXO avoidance support when conducting intrusive activities and as necessary for any other activities.
    d) Wildfires will be allowed to burn in these areas.

3) The area noted as "FWS Management Access" area within the "No Public Access" area is not known or suspected to contain UXO.

a) FWS may have access provided they have received a safety briefing.
b) FWS must coordinate with Fort McClellan operations prior to entry into this area.

4) The area noted as “Public Access” is not known or suspected to contain UXO.
    a) The public will be allowed unlimited access to this area during daylight hours, as set by FWS.
    b) Posters and pamphlets outlining the dangers associated with UXO and actions that should be taken (Recognize, Retreat, Report) should the public encounter UXO or suspect UXO will be made available at entrances to the Refuge. No UXO was found during characterization of this area. The posters and pamphlets are an added safety measure.
    c) An active community outreach educational program outlining the dangers associated with UXO and entering areas that are known or suspected to contain UXO will be implemented and maintained. This program should be based upon the Army's UXO Safety Education Program and emphasize the Three Rs (Recognize, Retreat, Report).

b. Access Controls (See the Enclosure 1 Figure)
    1) The Army has installed gates and barriers to deny access to areas being characterized. These gates are under lock and key control. Gate signs warn people to keep out of the area and provide a telephone number for the Transition Force Security Operations.
    2) Signs around the No Public Access” area prohibit trespass into that area.

c. Inspections
    1) Transition Force Security Operations personnel will inspect gates and barriers on a daily basis. (The enclosure 1 figure shows the locations of these gates and barriers.) The gates and barriers will be inspected on a non-routine basis during a 24-hour period. During these inspections, Transition Force Security Operations personnel will also inspect the boundaries and interiors to determine if trespassing has occurred. In addition, the integrity of warning signs will be inspected.
    2) Army contract personnel and FWS personnel, who enter the "No Public Access” area, will report unauthorized personnel to the Transition Force Security Office or local law enforcement agencies.
    3) The Army may inspect the property to verify that only Army authorized actions are occurring on the property.

d. UXO Safety Education Program:
    1) An active community outreach educational program outlining the dangers associated with UXO and entering areas that are known or

suspected to contain UXO will be implemented and maintained. This program should be based upon the Army's UXO Safety Education Program and emphasize the Three Rs (Recognize, Retreat, Report).

2) The Army will, at Army expense, provide initial UXO safety training to on-site FWS personnel.
3) Fort McClellan's Transition Force has instituted a community UXO Safety Educational Program that addresses potential explosive hazards on the former Army property. Fort McClellan's Transition Force provides this program to companies that work on Fort McClellan, such as utility companies and contractors; city and county law enforcement agencies; various city, county, state, and Federal agencies; civic groups; schools; nonprofit groups; and to the public, particularly those that live near the "No Public Access" area.

e. These Interim LUCs will be periodically reevaluated to determine their protectiveness and effectiveness.

7 - 14. See LUCIP introduction.

Enclosure 1 Figure